REMARKS/ARGUMENTS

Amendment and Election/Restriction

No new claims have been added. Claims 1-12, 14 15, 22-24, and 40-41 have been cancelled. Claims 13, 20-21, and 36-38 are currently amended. Claims 46-50 have been withdrawn.

Withdrawn Objections and Rejections

The objection to the Specification was withdrawn because the copending application serial numbers were inserted. The provisional obviousness-type double patenting rejection was withdrawn in view of the submitted Terminal Disclaimer.

Claims 1-44 rejected under 35 USC 102(a) over Uzio et al. US Patent No. 6,498,280 ("Uzio")

The rejection is based on the disclosure of Uzio concerning Group 8-10 catalysts and other metals with aluminas prepared by various techniques, although Uzio does not teach the claimed combinations and "eggshell" structure of the claimed catalysts. Applicants respectfully traverse the rejection with respect to remaining claims 13, 16-21, 25-39, and 42-45.

Remaining independent claims 13 and 36, and those claims dependent thereon, are amended to clarify the trimetallic eggshell catalyst structures and preparation of the invention wherein the first and second metals are rhodium and indium; and further wherein the eggshell metals-containing portion of the catalyst is at most 300 microns in depth. This clarification is consistent with the calculated and observed data represented in drawing Figure 1. See also specification paragraphs **[0071]**, **[0072]**, and **[0085]**.

Uzio does not teach the combination of metals and structure now shown by Applicants to provide a viable catalyst structure which is economically attractive in preparation and use, and provides significantly improved results in handling the removal of diolefins and alkynes from predominantly small olefin streams. The Examiner is especially directed to the comparison of 288 micron depth catalyst B of the invention against the full depth dispersion catalyst A, as given in Example 3.

No particular preparation is taught by Uzio to obtain a limited depth metal penetration on

the catalyst particle, most especially for the claimed combinations of metals in the claims. One of ordinary skill in the art is not instructed by Uzio to both pick the claimed metals, use a preparation to limit penetration of the metals, and most especially limit to less than 300 microns, now shown to be effective for the intended purpose of the catalyst.

Uzio does not teach the particular catalyst combinations and Uzio does not teach any penetration depths. Both are shown to be significant factors for the intended use, not suggested by Uzio. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 1-45 rejected under 35 USC 102(a) over Shepherd et al. US Patent No. 6,503,866 ("Shepherd")

Shepherd shows an alumina support with platinum group, Group 14 metal, and optionally other metals including indium in fairly broad ranges. Shepherd is primarily directed to the alumina support structure. Surface location of the metal on the support is disclosed. Shepherd also shows calcinations and reduction steps. Shepherd does not teach the claimed combinations of metals nor does Shepherd disclose the catalyst penetration into the surface of the support. The rejection responds to earlier arguments that the catalyst combinations are at least suggested and there is ample motivation to select those claimed. Applicants respectfully traverse the rejection in view of the amended claims.

As with respect to Uzio, there is insufficient motivation in the reference, or a combination of the references, to both select the claimed metal combinations, select surface location for the metals, and select the claimed penetration level of the metals in the catalyst structure. Shepherd does not suggest any depth of metal location and there is no motivation in either reference to pick a surface depth as claimed.

Applicants investigation into the removal of diolefins and alkynes from olefinic streams without excessively hydrogenating the valuable olefin (ethylene or propylene, e.g.) was the impetus to arrive at the claimed combinations and eggshell structure now claimed. Reconsideration and withdrawal of the rejection based on Shepherd are respectfully requested.

A notice of allowance is earnestly solicited.

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